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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------|
| 09/678,751 | 10/03/2000 | John B. Halbert | 5038-63 | 5518 |
| 20575 | 7590 | 11/20/2003 | | |
| MARGER JOHNSON & MCCOLLOM PC 1030 SW MORRISON STREET PORTLAND, OR 97205 | | | EXAMINER VITAL, PIERRE M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2188 | |

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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| APPLICATION NO./ CONTROL NO. | FILING DATE | FIRST NAMED INVENTOR / PATENT IN REEXAMINATION | ATTORNEY DOCKET NO. |
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| EXAMINER |
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| ART UNIT | PAPER |
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DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The Supplemental Information Disclosure Statement (IDS) filed 9/29/03 and submitted under 37 CFR 1.97 (c) has not been considered by the Examiner because it does not contain a statement under 37 CFR 1.97 (e) as required when filed after final action or notice of allowance.

Reginald G. Bragdon
REGINALD G. BRAGDON
PRIMARY EXAMINER

Notice of Allowability

Application No.

09/678,751

Examiner

Pierre M. Vital

Applicant(s)

HALBERT ET AL.

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/6/03.
2. ☒ The allowed claim(s) is/are 1, 4, 5, 7-14, 17-19, 15-16, 20, 22, 24-25 renumbered 1-20.
3. ☒ The drawings filed on 03 October 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____ | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

9/c
JK
10-20-03

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James E. Harris (Reg. No. 40,013) on October 9, 2003.

2. The application has been amended as follows:

In claim 4, line 1, after "claim 1,"; please insert --wherein--.

In claim 4, line 2, after "each"; please change "having" to --have--.

In claim 9, line 1, after "claim 5,"; please insert --wherein--.

In claim 9, line 1, after "controller", please insert --is--.

In claim 13, line 1, after "claim 11,"; please change "where" to --wherein--.

Please rewrite the abstract to read as follows:

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--Methods and apparatus for a memory system using a new memory module architecture are disclosed. In one embodiment, the memory module has two ranks of memory devices, each rank connected to a corresponding one of two 64-bit-wide data registers. The data registers connect to two 64-bit-wide ports of a 120:64

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multiplexer/demultiplexer, and a 64-bit-wide data buffer connects to the opposite port of the multiplexer/demultiplexer. A controller synchronizes the operation of the data registers, the multiplexer/demultiplexer, and the data buffer. In an operating environment, the data buffer connects to a memory bus. When a data access is performed, both ranks exchange data signaling with their corresponding data registers during a single data access. At the buffer, the memory bus data transfer occurs in two consecutive clock cycles, one cycle for each rank. This allows the memory bus transfer rate to double for the same memory bus width and memory device speed--.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Mon-Fri, 8:30 am - 6:00 pm, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.

P.M.V.

Pierre M. Vital
Art Unit 2188
October 9, 2003

Reginald G. Bragdon

REGINALD G. BRAGDON
PRIMARY EXAMINER

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